



PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO				Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	09/682,363
(use as many sheets as necessary)				Filing Date	8/24/2001
				First Named Inventor	Anthony C. Zuppner
				Art Unit	3745 1753
				Examiner Name	Diamond
Sheet	1	of	1	Attorney Docket Number	22122878-6

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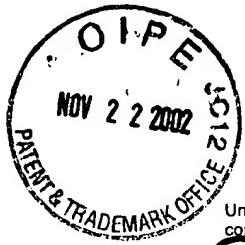
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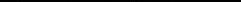
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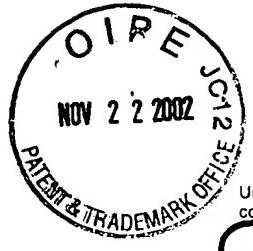
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 5

Complete if Known

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Filing Date	8/24/2001
First Named Inventor	Anthony C. Zupperto
Group Art Unit	3745-1753
Examiner Name	Diamond
Attorney Docket Number	22122878-6

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
ADD	5	ACHERMANN, M. et al., "Carrier dynamics around nano-scale Schottky contacts: a femtosecond near-field study", Applied Surface Science 7659 (2002) 1-4.	✓ 1
ADD	6	AESCHLIMANN, M. et al., "Competing nonradiative channels for hot electron induced surface photochemistry", Chemical Physics, April 15, 1996, pp. 127-141, Vol: 205, Issue: 1-2.	✓ 1
ADD	7	AESCHLIMANN, M. et al., "Ultrafast electron dynamics in metals", The Ultrafast Surface Science Group, http://www.ilp.physik.uni-essen.de/aeschlimann/2y_photo.htm (Date Unknown).	✓ 1
ADD	8	AUERBACH, D. et al., "Reagent Vibrational Excitation: A Key to Understanding Chemical Dynamics at Surfaces?", abstract only. (Date Unknown).	✓ 1
ADD	9	BALANDIN, A. et al., "Significant decrease of the lattice thermal conductivity due to phonon confinement in a free-standing semiconductor quantum well", Physical Review B, July 15, 1998 Vol. 58, Issue 3, pp. 1545-1549.	NOV 27 2001 TECHNOLOGY CENTER 3700
ADD	10	BALANDIN, A. et al., "Effect of phonon confinement on the thermoelectric figure of merit of quantum wells", Journal of Applied Physics, December 1, 1998, Vol. 84, Issue 11, pp. 6149-6155.	NOV 27 2001 TECHNOLOGY CENTER 3700
ADD	11	BONN, M. et al., "Phonon- Versus Electron-Mediated Desorption and Oxidation of CO on Ru(0001)", Science, Vol. 285, Number 5430, Issue of 13 Aug 1999, pp. 1042 - 1045.	✓ 1
ADD	12	CHANG, Y. et al., "Coherent phonon spectroscopy of GaAs surfaces using time-resolved second-harmonic generation", Chemical Physics, 251/1-3, pages 283-308, (2000).	✓ 1
ADD	13	CHEN, C.-C. et al., "Hot electron reduction at n-Si/Au thin film electrodes", Journal-of-the-Electrochemical-Society, Vol. 139, November 1992, pages 3243-3249.	TC 1700 NOV 27 2001
ADD	14	CHOI, C.K. et al., "Ultrafast carrier dynamics in a highly excited GaN epilayer", Physical Review B, Vol. 63, 115315, 15 March 2001, 6 pages.	TC 1700 NOV 27 2001

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Sheet 3 of 5

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ADD	15	DEBERNARDI, A. et al., "Anharmonic Phonon Lifetimes in Semiconductors from Density-Functional Perturbation Theory", Physical Review Letters, VOL. 75, NUMBER 9, 28 AUGUST 1995, pp 1819 - 1822.	
ADD	16	DELFATTI, N. et al., "Temperature-dependent electron-lattice thermalization in GaAs", Physical Review B, 15 FEBRUARY 1999-I, Vol. 59, Number 7, pp 4576 - 4579.	
ADD	17	DENZLER, D.N., et al., "Surface femtochemistry: Ultrafast reaction dynamics driven by hot electron mediated reaction pathways", Femtochemistry and Femtobiology: Ultrafast Dynamics in Molecular Science. (World Scientific. 2002).	
ADD	18	DIESING, D. et al., "Surface reactions with hot electrons and hot holes in metals", Surface Science, 331-333, 1995, pages 289 - 293.	
ADD	19	DRISKILL-SMITH, A. A. G. et al., "The "nanotriode": A nanoscale field-emission tube", Applied Physics Letters, November 1, 1999, Vol. 75, Issue 18, pp. 2845-2847.	
ADD	20	FAN, C. Y. et al., "The oxidation of CO on RuO ₂ - 110 - at room temperature", Journal of Chemical Physics, Vol. 114, Number 22, 8 June 2001, P 10058.	
ADD	21	FRESE, K.W., Jr. et al., "Hot electron reduction at etched n-Si/Pt thin film electrodes", Journal-of-the-Electrochemical-Society, Vol. 141, September 1994, pages 2402-9.	
ADD	22	FUNK, S. et al., "Desorption of CO from Ru - 001 - induced by near-infrared femtosecond laser pulses", Journal of Chemical Physics, Vol. 112, Number 22, 8 June 2000, pages 9888 - 9897.	
ADD	23	GADZUK, J. W., "Resonance-assisted hot electron femtochemistry at surfaces", Physical Review Letters, May 27, 1996, Vol. 76, Issue 22, pages 4234-4237.	
ADD	24	GADZUK, J. W., "Multiple Electron Processes in Hot-Electron Femtochemistry at Surfaces", http://www.cstl.nist.gov/div837/837.03/highlite/gadzuk1999.htm (Date Unknown)	NDY 27 2004
ADD	25	GADZUK, J. W., "Surface Femtochemistry with Fast Lasers and Slow Nanostructures", http://www.cstl.nist.gov/div837/837.03/highlite/previous/dietmim.htm (Date Unknown)	NDY 27 2004

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Sheet 4 of 5

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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ADD	26	GAILLARD, F. et al., "Hot electron generation in aqueous solution at oxide-covered tantalum electrodes. Reduction of methylpyridinium and electrogenerated chemiluminescence of Ru(bpy)32+", Journal of Physical Chemistry B, Vol. 103, No. 4, January 28, 1999, pages 667-74.	✓ ✓ ✓ ✓ ✓
ADD	27	GAO, S., "Quantum kinetic theory of vibrational heating and bond breaking by hot electrons", Physical Review B, Vol. 55, No. 3, 15 January 1997-I, pages 1876-1886.	✓ ✓ ✓ ✓ ✓
ADD	28	GERGEN, B. et al., "Chemically Induced Electronic Excitations at Metal Surfaces", Science, Vol. 294, Number 5551, Issue of 21 December 2001, pages 2521-2523.	✓ ✓ ✓ ✓ ✓
ADD	29	GUO, J. et al., "The desorption yield dependence on wavelength of femtosecond laser from CO/Cu(111)", Annual Meeting of the American Physical Society, March 1999, Atlanta, GA; Session BC18 - Surfaces (General), ORAL session, March 21; Room 258W, GWCC [BC18.06].	✓ ✓ ✓ ✓ ✓ TC 11,000
ADD	30	HESS, S. et al., "Hot Carrier Relaxation by Extreme Electron - LO Phonon Scattering in GaN", http://www.physics.ox.ac.uk/rtaylor/images/hot%20carrier%20poster.pdf (Date Unknown).	✓ ✓ ✓ ✓ ✓
ADD	31	HOFER, U., "Self-Trapping of Electrons at Surfaces", Science, Vol. 279, Number 5348, Issue of 9 January 1998, pages 190 - 191.	✓ ✓ ✓ ✓ ✓
ADD	32	KATZ, G. et al., "A theoretical study of hole induced desorption", Journal of Chemical Physics, October 22, 1999, Vol. 111, Issue 16, pages 7593-7598.	✓ ✓ ✓ ✓ ✓
ADD	33	LEE, B. C. et al., "Transmission of longitudinal optical phonons through a barrier in uniaxial crystals", Physical Review B, Vol. 65, 153315, 15 April 2002.	✓ ✓ ✓ ✓ ✓
ADD	34	NANOLITE, "NANOLITE Sparkflashlamp", http://www.hps.com/products/nanolaen.htm (Date Unknown).	✓ ✓ ✓ ✓ ✓ NOV 27/2002
ADD	35	NIENHAUS, H., "Electronic excitations by chemical reactions on metal surfaces", Surface Science Reports, 45, (2002), pages 1 - 78.	✓ ✓ ✓ ✓ ✓ TECHNOLOGY CENTER 3700

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ADD	36	PLIHAL, M. et al., "Role of intra-adsorbate Coulomb correlations in energy transfer at metal surfaces", Physical Review B, July 15, 1998, Vol. 58, Issue 4, pages 2191-2206.	1 1
ADD	37	PONTIUS, N. et al., "Size-dependent hot-electron dynamics in small Pd-clusters", Journal of Chemical Physics, December 8, 2001, Vol. 115, Issue 22, pages 10479-10483.	1 1
ADD	38	PRYBYLA, J. A. et al., "Femtosecond time-resolved surface reaction: Desorption of CO from Cu(111) in < 325 fsec", Physical Review Letters, January 27, 1992, Vol. 68, Issue 4, pp. 503-506.	1 1
ADD	39	RINNEMO, M., "Catalytic Ignition and Kinetic Phase Transitions", http://www2.lib.chalmers.se/cth/diss/doc/9596/RinnemoMats.html (Date Unknown).	1 1
ADD	40	SAALFRANK, P. et al., "Quantum dynamics of bond breaking in a dissipative environment: Indirect and direct photodesorption of neutrals from metals", J. Chem. Phys. 105 (6), 8 August 1996, pages 2441 - 2454.	1 1
ADD	41	SUNG, Y.-E., et al., "Enhancement of electrochemical hot electron injection into electrolyte solutions at oxide-covered tantalum electrodes by thin platinum films", Journal of Physical Chemistry B., Vol. 102, No. 49, December 3, 1998, pages 9806-11.	1 1
ADD	42	WHITE, J. M., "Using photons and electrons to drive surface chemical reactions", Journal of Molecular Catalysis A: Chemical 131, 1998, pages 71-90.	1 1
ADD	43	ZHDANOV, V.P. et al., "Substrate-mediated photoinduced chemical reactions on ultrathin metal films", Surface Science, Vol. 432 (#3), pages L599-L603, Jul 20, 1999.	1 1
ADD	44	ZHU, X.-Y., "Surface photochemistry: from hot reactions to hot materials", Surface Science, Vol. 390, (1997), pages 224-236.	1 1

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